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ILLUMINA CAMBRIDGE LTD.

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

ILLUMINA, INC. and
ILLUMINA CAMBRIDGE LTD.,

Plaintiffs,

v.

BGI GENOMICS CO., LTD.,
BGI AMERICAS CORP.,
MGI TECH CO., LTD.,
MGI AMERICAS, INC., and
COMPLETE GENOMICS INC.,

Defendants.

COMPLETE GENOMICS INC.,
Counterclaim-Plaintiff,

v.

ILLUMINA, INC., and
ILLUMINA CAMBRIDGE LTD.,

Counterclaim-Defendants.

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Case No. 3:19-cv-03770-WHO
Case No. 3:20-cv-01465-WHO

**NOTICE OF MOTION AND MOTION
FOR ATTORNEY FEES AND
ENHANCED DAMAGES**

Date: March 2, 2022
Time: 2:00 PM
Judge: William H. Orrick

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NOTICE OF MOTION AND MOTION

Pursuant to 35 U.S.C. § 284 and 285, Plaintiffs Illumina, Inc. and Illumina Cambridge, Ltd. (collectively “Illumina”) request that this Court Order that Plaintiffs are entitled an award of attorney fees and enhanced damages from Defendants BGI Genomics Co., LTD (“BGI Genomics”), BGI Americas Corp. (“BGI Americas”), MGI Tech Co., Ltd. (“MGI Tech”), MGI Americas, Inc. (“MGI”), and Complete Genomics, Inc. (“Complete Genomics”) (collectively “Defendants” or “BGI”). This motion is based on this notice and supporting memorandum, the trial record, declaration of Audra Sawyer, and such other information of which the Court may take judicial notice. The hearing date is noticed for March 2, 2022 at 2:00 pm via videoconference before Judge William H. Orrick.

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF MOTION

I. INTRODUCTION

BGI’s corporate management brazenly disregarded Illumina’s battle-hardened patent rights. After losing its IPR challenge to try to clear the way for its U.S. product launch, BGI’s U.S. executive team recognized that they could not legally sell BGI’s azido-based products in the U.S. and repeatedly said as much in BGI’s internal documents. However, BGI trampled over any respect it might have had for Illumina’s patent rights when Chairman Wang Jian harshly criticized the head of BGI’s U.S. operations as “too rule-abiding” for failing to promote BGI’s infringing technology in the U.S. Within days after that, BGI set itself on its irresponsible course to willfully infringe large-scale by launching its infringing products in the U.S.—knowing it would be violating key Illumina patent rights.

This is precisely the type of corporate conduct that deserves to be deterred by attorney fees and an enhanced damages award. Even beyond that, BGI’s litigation conduct drove up the cost of this litigation, which simple respect for Illumina’s patent rights would have avoided. BGI’s defiant litigation posture was to complicate the adjudication of its willful infringement by (1) pursuing meritless inequitable conduct theories, (2) forcing Illumina to litigate numerous discovery issues in which BGI took unreasonable positions and refused to comply with Court Orders, (3) advancing baseless infringement claims of its own patent, and (4) needlessly drawing out litigation of non-infringement of Illumina’s Patents.

An award of attorney fees and enhanced damages is justified.

II. BACKGROUND

Illumina's patented azidomethyl technology is widely respected as the engine for the technological miracle of vastly improved DNA sequencing that has changed modern healthcare and fueled the genomics revolution. It is so widely respected that even BGI's own industry expert freely acknowledged these facts and more. *See e.g.*, Dkt. No.¹ 525-4 at 9 (97:19-98:4) ("I applaud [Illumina] for their remarkable success and the fact that they drove the \$1 million cost to substantially below \$1,000"); 112:24-113:12; 178:10-22, 203:8-14, 203:23-204:7. This case became necessary because BGI refused to respect Illumina's rights.

Protected by the patents-in-suit, Illumina invested heavily in its patented azido technology to drive down the cost of sequencing from one million dollars per genome to less than one thousand dollars per genome. *See e.g., id.* at 9 (97:19-98:4). While Illumina was pursuing a successful course of innovation, quality, and price-reduction, BGI was making copy-cat products that it knew infringed Illumina's patents, and gearing up to launch those products in the U.S. Despite its many years attempting to develop an azido-alternative, BGI ultimately could not resist the temptation of mimicking Illumina's successful azido-based sequencing technology.

As a consequence, Illumina filed two cases against Defendants asserting five Patents: U.S. Patent No. 7,566,537 (the "'537 Patent"); 9,410,200 (the "'200 Patent"); 10,480,025 (the "'025 Patent"); 7,541,444 (the "'444 Patent"); and 7,771,973 (the "'973 Patent"). BGI Counterclaimed, asserting U.S. Patent No. 9,944,984 (the "'984 Patent"). Dkt. No. 54 at 66.

In the face of Illumina's infringement claims, BGI nevertheless announced in February 2020 that it was planning to launch its azido-based sequencers in the United States.² This forced Illumina to file a preliminary injunction motion that this Court had to adjudicate as the Covid crisis hit. Dkt. No. 11 (BGI II). This Court granted Illumina's motion for a preliminary injunction against BGI, enjoining BGI from making, using, selling, importing, or offering to sell in the U.S. its sequencing products

¹ Docket citations are to Case No. 3:19-cv-03770 ("BGI I") unless followed by "(BGI II)," which references Case No. 3:20-cv-01465.

² Chairman Wang dubiously testified at trial that he had never even heard of a United States launch for BGI's sequencers. Dkt. No. 525-5 at 19-23 (65:13-81:25). This implausible misdirection by BGI's corporate leadership is not an isolated event.

1 accused of infringement. These products included BGI's two sequencing chemistries, referred to as
2 "StandardMPS" and "CoolMPS." *Id.*

3 On September 9, 2021, this Court granted summary judgment for Illumina, finding BGI's patent
4 infringement counterclaim failed as a matter of law. Dkt. No. 424. The Court also granted Illumina
5 summary judgment that BGI's inequitable conduct defense failed as a matter of law, and recognized
6 that BGI had no viable non-infringement defense. *Id.* at 25.

7 After a six-day jury trial from November 15, 2021 through November 22, 2021, the jury found
8 that BGI willfully infringed Illumina's patents, upheld the validity of '537, '200, '025, and '973 Patents,
9 and awarded Illumina \$8 million in damages. Dkt. No. 550.

10 **III. LEGAL STANDARD**

11 **A. Attorney Fees**

12 Under 35 U.S.C. § 285, a "court in exceptional cases may award reasonable attorney fees to the
13 prevailing party." A plaintiff may be considered a prevailing party if they "obtain an enforceable
14 judgment against the defendant from whom fees are sought." *Farrar v. Hobby*, 506 U.S. 103, 111
15 (1992). An exceptional case for purposes of awarding attorney fees is "simply one that stands out from
16 others with respect to the substantive strength of a party's litigation position (considering both the
17 governing law and the facts of the case) or the unreasonable manner in which the case was litigated."
18 *Octane Fitness, LLC v. Icon Health & Fitness, Inc.*, 572 U.S. 545, 554 (2014). A case may be
19 exceptional when it involves willful infringement, bad faith, litigation misconduct, or unprofessional
20 behavior. *See nCube Corp. v. SeaChange Int'l, Inc.*, 436 F.3d 1317, 1319 (Fed. Cir. 2006).

21 The "willfulness of the infringement by the accused infringer may be a sufficient basis in a
22 particular case for finding the case 'exceptional.'" *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d
23 1327, 1340 (Fed. Cir. 2004); *see also Modine Mfg. Co. v. Allen Group, Inc.*, 917 F.2d 538, 543 (Fed.
24 Cir. 1990)) ("An express finding of willful infringement is a sufficient basis for classifying a case as
25 'exceptional.'). "Although an attorney fee award is not mandatory when willful infringement has been
26 found, precedent establishes that the court should explain its decision not to award attorney fees" where
27 there is willful infringement. *Spectralytics, Inc. v. Cordis Corp.*, 649 F.3d 1336, 1349 (Fed. Cir. 2011).
28 It is also "well established that litigation misconduct and 'unprofessional behavior may suffice, by

1 themselves, to make a case exceptional under § 285.” *MarcTec, LLC v. Johnson & Johnson*, 664 F.3d
 2 907, 921-22 (Fed. Cir. 2012) (citing *Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1106 (Fed. Cir.
 3 2003)). A party seeking fees is only required to show that fees are warranted by a preponderance of the
 4 evidence. *Octane Fitness*, 572 U.S. at 557-58.

5 **B. Enhanced Damages**

6 Pursuant to 35 U.S.C. § 284, courts “may increase the damages up to three times the amount
 7 found or assessed” for an infringer in “egregious cases typified by willful misconduct.” *Halo Elecs.,*
 8 *Inc. v. Pulse Elecs., Inc.*, 579 U.S. 93, 106 (2016). “The subjective willfulness of a patent
 9 infringer...may warrant enhanced damages without regard to whether his infringement was objectively
 10 reckless.” *Id.* at 105.

11 Once a patentee demonstrates the infringer’s subjective willfulness, the question of enhanced
 12 damages is left to the discretion of the district court. *Id.* at 106. There are no explicit limits or conditions
 13 on when a court may award enhanced damages, and § 284 allows “courts to punish the full range of
 14 culpable behavior.” *Id.* To determine whether a court should exercise its discretion to award enhanced
 15 damages, courts may consider nine factors described in *Read Corp. v. Portec, Inc.*, 970 F.2d 816 (Fed.
 16 Cir. 1992). The *Read* factors include: (1) whether the infringer deliberately copied the ideas or design
 17 of another; (2) whether the infringer, when he knew of the other’s patent protection, investigated the
 18 scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; (3) the
 19 infringer’s behavior as a party to the litigation; (4) defendant’s size and financial condition; (5)
 20 closeness of the case; (6) duration of defendant’s misconduct; (7) remedial action by the defendant; (8)
 21 defendant’s motivation for harm, and (9) whether defendant attempted to conceal its misconduct. *Id.*
 22 at 827, abrogated in part on other grounds by *Markman v. Westview Instruments, Inc.*, 517 U.S. 370
 23 (1996); *see also Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1244-45 (Fed. Cir. 2017)
 24 (“district courts often apply the non-exclusive factors articulated in *Read*...”).

25 **IV. ILLUMINA SHOULD BE AWARDED ATTORNEY FEES**

26 Illumina should be awarded attorney fees in this case based on both the jury’s finding of willful
 27 infringement and BGI’s unreasonable litigation conduct.

A. Illumina Is The Prevailing Party

Illumina is the prevailing party. Illumina prevailed on direct infringement at summary judgment, and the jury found in favor of Illumina on the issues of willful infringement and validity for four out of the five Asserted Patents. The jury also awarded Illumina \$8 million in damages. As such, Illumina obtained “an enforceable judgment against the defendant from whom fees are sought” and is the prevailing party. *Farrar*, 506 U.S. at 109.

B. BGI’s Willful Infringement Warrants Attorney Fees

BGI knew of Illumina’s patents, purposely copied Illumina’s technology, and proceeded with its U.S. launch of sequencing products knowing they infringed Illumina’s battle-hardened patents. This conduct warrants an award of attorney fees.

1. BGI Copied Illumina’s Technology With Awareness Of Illumina’s Patents

BGI recognized that Illumina’s azido-based products employed superior sequencing technology and enjoyed a stellar reputation. It then set out to copy them.

CGI, which was acquired by BGI in 2013, knew of Illumina’s technology as far back as 2008 when Nature published the landmark article on Illumina’s azido technology. Dkt. No. 540 (Trial Tr.) at 736:3-5 (cross examination of S. Drmananc) (agreeing that “the Nature article in 2008 about Illumina’s azido technology caught everybody’s eye”). When BGI acquired CGI in 2013, it promptly pivoted from CGI’s ligation-based chemistry to Illumina’s proven azido based SBS-technology. Dkt. No. 539 (Trial Tr.) at 352:1-357:14. BGI recognized upfront that Illumina’s azido technology was the “Best” and patented by Illumina. TX0393; Dkt. No. 539 (Trial Tr.) at 325:16-326:17 (C. Xu); Dkt. No. 540 (Trial Tr.) at 740:23-741:11 (S. Drmanac).

BGI copied Illumina’s azido technology, even as it recognized that Illumina’s patent rights deserved respect. BGI’s leadership—including BGI’s Senior Director for Research (Chongjun Xu), the CEO of BGI Americas (Yongwei Zhang), and the executive director of the BGI Group (Xun Xu)—testified that they were aware of Qiagen’s failed attempts to challenge Illumina’s azidomethyl patents in 2015, and the injunction that subsequently issued in 2016 against Qiagen’s GeneReader product for infringing Illumina’s azido patents. Dkt. No. 539 (Trial Tr.) 319:24-320:17; *id.* at 357:16-18, 370:14 - 371:17; Dkt. No. 525-6 at 7, 9 (47:14-48:1, 53:25-54:14).

Despite its knowledge of Illumina's patents, BGI engaged in a years-long effort to copy Illumina's SBS technology. The team of researchers at BGI developing sequencing-by-synthesis technology was literally named for Illumina and called the "XY team." Dkt. No. 539 (Trial Tr.) at 313:20-314:15. "XY" was BGI's code name for Illumina. Dkt. No. 538 (Trial Tr.) at 286:10-12. In pursuit of its quest to "mimic XY," TX0369, the research team at BGI hired a third-party to determine the structure of Illumina's nucleotides, which revealed the details of Illumina's azidomethyl chemistry. TX2539; Dkt. No. 539 (Trial Tr.) at 311:2-4. Recognizing that Illumina's patented azidomethyl technology was the "best chemistry so far" (and noting it was patented), BGI decided to use azidomethyl as a blocking group in its own products. Dkt. No. 538 (Trial Tr.) at 278:6-9; TX0393.

BGI did not stop at copying Illumina's blocking group. BGI analyzed and copied Illumina's polymerase, its sequencing algorithm, and its linker used to attach a fluorescent label to the nucleotides. Dkt. No. 539 (Trial Tr.) at 316:22-24; 319:13-16; TX0662; Dkt. No. 540 (Trial Tr.) at 650:5-13 (explaining that BGI's linker is "atom by atom...identical" to the linker described in Illumina's Nature publication). Illumina's expert explained BGI's copying project, Dkt. No. 540 (Trial Tr.) at 632:1-9, 646:13-650:19, and BGI's expert had no response. Countless documents and testimony confirm that BGI's sequencing products were "developed from XY [aka Illumina]." TX0394.

Illumina's un rebutted evidence that BGI copied Illumina's azidomethyl-based sequencing-by-synthesis technology demonstrates that BGI willfully infringed Illumina's patents and attempted to exploit Illumina's enormous good will. This finding alone is sufficient support of an award of attorney fees. *See Golight*, 355 F.3d at 1340.

2. BGI Did Not Have A Good Faith Belief That The Asserted Patents Were Invalid Or Not Infringed

In the face of Illumina's azido patents being respected by the industry, the Patent Office, and the Courts, BGI failed to have a good faith belief that it was not infringing Illumina's Patents. None of BGI's witnesses testified to a reasonable belief that BGI's sequencing products did not infringe the asserted Patents. Indeed, BGI never really had a meaningful non-infringement argument—which makes sense given its slavish copying of the azido-blocking chemistry.

Likewise, BGI did not demonstrate that it had a good faith belief of invalidity. BGI's corporate representative on the topic of willfulness, MGI President Duncan Yu, did not testify that himself or any

1 of the other decision makers had a belief that Illumina's Patents were invalid at any time. This should
 2 end the inquiry. *AngioScore, Inc. v. TriReme Med., Inc.*, No. 12-CV-03393-YGR, 2015 WL 4040388
 3 at *23 (N.D. Cal. July 1, 2015) ("A Rule 30(b)(6) deposition notice serves a unique function: it is the
 4 sworn corporate admission that is binding on the corporation."). Duncan Yu and others acknowledged
 5 Qiagen's failed challenge of Illumina's azido patent, and that **BGI believed it was prohibited from**
 6 **entering the U.S. market** after the decision refusing to institute BGI's IPR in 2018. Dkt. No. 525-7 at
 7 5 (37:3-15); *id.* at 17 (106:19-107:17); *see also* TX0321-025 ("DNBSeq platform cannot enter the U.S.
 8 market due to IP consideration."); Dkt. No. 525-5 at 14 (47:19-48:2) ("[W]e respect the decision made
 9 by relevant agencies of the United States.").

10 The only BGI witness who substantively alleged any belief of invalidity was Dr. Rade Drmanac,
 11 who had absolutely no documents showing that he held these views prior to trial. By Dr. Drmanac's
 12 own admission, he was **not** at all part of the decision to move forward with BGI's U.S. Product launch.
 13 Dkt. No. 539 (Trial Tr.) 493:5-20. Dr. Drmanac's testimony amounted to a convoluted assertion that
 14 the ten judges who found the '537 Patent invalid were "misled" based on "false arguments." *Id.* at
 15 463:6-9; 471:20-472:6. Dr. Drmanac's unsubstantiated and reckless opinion was **never** communicated
 16 to BGI's upper management or to any decision maker. This Court rejected the gist of Dr. Drmanac's
 17 conspiracy theory in finding BGI's original inequitable conduct theory meritless on its face. *See* Dkt.
 18 No. 81 at 1 (concluding that BGI's allegations "do not arise to the level of inequitable conduct" and "do
 19 little more than challenge attorney interpretations of prior art that were litigated and decided on multiple
 20 occasions").

21 Importantly, the President of MGI, Duncan Yu, who made the decision to launch the infringing
 22 products in the U.S., and who was identified as the corporate representative on the subject of willfulness,
 23 did not know of the opinions packaged in Dr. Drmanac's trial examination. Dr. Drmanac also stated
 24 that his opinions about the invalidity of the asserted Patents were all reflected in BGI's Petitions to the
 25 PTAB, which were **rejected**. Dkt. No. 539 (Trial Tr.) at 479:13-481:3. Thus, when BGI attempted its
 26 U.S. product launch in 2020, Dr. Drmanac's beliefs were already confirmed as legally unsupported.

27 3. BGI Proceeded With Its Commercial Launch Despite Knowledge Of 28 Infringement

Despite BGI's knowledge of Illumina's Patents, intentional copying of Illumina's technology,

1 and lack of any good-faith belief of non-infringement or invalidity, BGI attempted to move forward
2 with a commercial launch of its infringing products in the U.S. BGI was repeatedly warned that it
3 should not introduce products that used Illumina's azidomethyl technology, but moved forward
4 regardless due to the lure of profits in "the biggest market for genomics." TX0699-002. In 2015,
5 Illumina sent an email informing BGI that if BGI's new chemistry was based on sequencing-by-
6 synthesis, it would likely "create some serious challenges." Ex. 1 (TX2151-002-003). Rather than take
7 Illumina's inquiry seriously, BGI crafted a misleading response that attempted to obscure its use of
8 Illumina's patented technology by falsely indicating that it was using the old CGI ligation chemistry.
9 TX0696.

10 Further, as described above, BGI knew that Qiagen's challenge to Illumina's azido patents had
11 failed before the PTAB and the Federal Circuit. Both ThermoFisher and Qiagen voiced serious
12 concerns to BGI about its decision to use azidomethyl due to Illumina's patents. A BGI employee
13 reported that ThermoFischer did not "want to touch anything with azido chemistry." TX0765-001.
14 Likewise, Qiagen told BGI that they "ruled out the possibility of using azido chemistry on [BGI's]
15 instrument since it will definitely trigger lawsuits." TX0703-001.

16 Undeterred by Qiagen's failed attempt at challenging Illumina's azido patents, BGI attempted
17 its own invalidity challenges before the PTAB. TX0984; TX0985. After BGI's challenges were
18 squarely rejected, TX0986, TX0987, BGI's management explicitly acknowledged that they were
19 *prohibited* from entering the United States with their sequencing products. TX0321-025 ("DNBSeq
20 platform cannot enter US market due to IP consideration"); TX0322-001 ("I see your point. They [BGI
21 management] can only go into countries without azido patents"); Dkt. No. 525-6 at 12 (72:24-73:14)
22 ("We understand we cannot doing selling" after BGI's attempt to invalidate Illumina's patents failed);
23 TX0323-002; TX0702-002.

24 BGI decided to launch into the U.S. anyways, at the direction of BGI's top level executives. The
25 Chairman of BGI's Board of Directors, Jian Wang, instructed the Americas team to move forward with
26 the commercial launch and "not be afraid of battles." TX0698-002. Chairman Wang chastised his team
27 for being "too rule-abiding" and urged them to initiate a "full-court press" with BGI's products in the
28 U.S. TX1588-002. In a weak attempt to deny responsibility, Chairman Wang argued that he had not

1 approved the sale of the infringing products in the United States even though BGI's own documents
 2 show otherwise. *Compare* Dkt. No. 525-5 at 6 (20:24-21:6) ("I do not recall whether I approved of"
 3 the commercialization of MGI sequencers in the U.S.) *with* TX0389 ("Wang Jian understood the
 4 perception problem and agreed that we should go ahead with selling CoolNGS in all countries.") *and*
 5 TX0726 ("With Mr. Wang Jian and HQ support, I want to have a full-court press in BD area in Americas
 6 now"); *see also* Dkt. No. 539 (Trial Tr.) at 392:18-25. BGI's blatantly infringing commercial activities
 7 in the U.S. despite widespread acknowledgment of Illumina's Patents rights is nothing short of
 8 exceptional. *See, e.g., Avia Grp. Int'l, Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1567 (Fed. Cir. 1988)
 9 ("In this case, the willfulness of the infringement provided a sufficient basis for a section 285 attorney
 10 fee award to the prevailing patent owner"); *Johnstech Int'l Corp. v. JF Microtechnology Sdn Bhd*, No.
 11 3:14-cv-02864-JD, 2018 WL 3730404, at *4 (N.D. Cal. Aug. 6, 2018) ("A finding of willful
 12 infringement may be 'compelling' evidence that a case was 'exceptional' under Section 285.").

13 **C. The Substantive Strength Of Illumina's Positions And BGI's Unreasonable** 14 **Conduct In Litigating This Case Warrants Attorney Fees**

15 The substantive strength of Illumina's case and BGI's unreasonable litigation tactics also
 16 support an award of attorney fees. BGI wasted the resources of the parties and the Court by continuing
 17 to litigate non-infringement of Illumina's Patents despite its lack of defenses, infringement of its own
 18 patents with no viable theory, and unsupported inequitable conduct claims. BGI's conduct warrants an
 19 award of attorney fees. *Nikko Materials USA, Inc. v. R.E. Serv. Co., Inc.*, No. C 03-2549 SBA, 2006
 20 WL 118438, at *8 (N.D. Cal. Jan. 13, 2006) ("Indeed, when RES' conduct is considered in the
 21 cumulative, coupled with the fact that RES has been found to have willfully infringed NIKKO's patents
 22 during three separate lawsuits, the scales are tipped very heavily in favor of an exceptional case
 23 finding.").

24 **1. BGI's Infringement And Invalidity Positions Were Substantively Weak**

25 BGI advanced and maintained substantively weak positions with respect to both non-
 26 infringement and invalidity. BGI had no non-infringement defense in this case, with the exception of
 27 its defense to infringement of the '025 Patent by its CoolMPS Product. Yet BGI needlessly forced
 28 Illumina to waste resources litigating direct infringement through summary judgment. BGI did not
 present a defense to direct infringement of its StandardMPS products for any of the asserted patents, or

1 to direct infringement of its CoolMPS products for the '973 and '444 Patents. It did not serve expert
2 reports on these issues and did not attempt to dispute Illumina's motion for summary judgment on
3 infringement. *See* Dkt. No. 424 at 25. However, rather than stipulating to infringement, BGI forced
4 Illumina to go through discovery and expert analysis as though it were contested and to brief an
5 unconstested summary judgment motion for both StandardMPS and CoolMPS. *Id.* BGI's continued
6 assertions of meritless positions that wasted time and effort for both parties was unreasonable and
7 supports an award of attorney fees. *See nCube Corp.*, 436 F.3d at 1325 (Fed. Cir. 2006) (affirming an
8 award of attorney fees where the literal infringement case was "not [even] close").

9 BGI's obviousness challenges were also substantively weak. BGI theories at least with respect
10 to the '537, '200, '025, and '973 Patents rehashed invalidity arguments based on the Zavgorodny
11 reference that had been previously rejected in multiple forums by ten different judges. Before this case,
12 the '537 Patent had been upheld by the PTAB in response to a challenge by Qiagen using Zavgorodny
13 in combination with references teaching sequencing by synthesis, and that decision was affirmed by the
14 Federal Circuit. BGI's subsequent IPR challenges to the '537 Patent using similar theories were denied
15 institution. As this Court recognized in its opinion granting Illumina's motion for a preliminary
16 injunction, BGI's invalidity theories for the '537, '200, '025, and '973 Patents based on Zavgorodny
17 were nearly identical to those that had been previously rejected by the PTAB and the Federal Circuit.
18 Dkt. No. 185 at 16 ("The argument that it would be obvious to use an azidomethyl group as taught by
19 Zavgorodny with a variety of prior art references teaching sequencing has been extensively litigated
20 and determined to be weak."). Accordingly, BGI's invalidity case with respect to at least the '537,
21 '200, '973, and '025 Patents was substantively weak.

22 As BGI recognized, the scope of the '444 Patent is the broadest. Dkt. No. 557 at DDX-6.2.
23 Thus, the fact that the jury did not uphold the validity of the '444 Patent is not informative as to the
24 substantive weakness of the invalidity theories with respect to the other four Asserted Patents.³ Illumina
25 is only seeking four-fifths of its attorney fees related to defending BGI's invalidity case to account for
26 the jury's verdict with respect to the '444 Patent.

27
28 ³ Illumina also does not believe that the jury came to the correct decision on the validity of the '444
Patent, and is submitting a motion for judgment as a matter of law on this issue.

2. BGI's Assertion Of The '984 Patent Was Baseless And Unreasonable

BGI's continued assertion of its '984 Patent is further evidence of BGI's unreasonableness in litigating this case. BGI's meritless infringement theory was eviscerated by this Court's straightforward claim construction Order, leaving it with no basis to continue to assert infringement. BGI's continued attempts to litigate the '984 Patent after claim construction were legally indefensible and support an award of attorney fees.

The '984 Patent describes DNA arrays in which molecules comprised of multiple copies of the same target sequence bind to binding regions on the array for sequencing. BGI's original infringement theory was dependent on the dubious argument that the claims of the '984 Patent do not require that the binding regions are occupied by a *single molecule* comprised of multiple copies of the same DNA sequence. Dkt. No. 97 at 10-11; *see also* Dkt. No. 190 at 17. However, the Court rejected that meritless argument in its claim construction Order. Dkt. No. 190 at 17. The Court made clear that "the use of one macromolecule per binding region...is central to the invention" and accordingly limited the claims to arrays in which "more than 50% of the DNA binding regions...are occupied by a *single* DNA molecule comprising multiple copies of only one" DNA sequence. *Id.* at 20-21, 25.

Four days after the Court's June 26, 2020 claim construction ruling, Illumina notified BGI that it should promptly drop its infringement claims because it had no factual basis to maintain them. Dkt. No. 379-6 at 7. BGI continued to assert its claim regardless, forcing the parties to expend time in discovery and expert reports to litigate a baseless infringement claim. Ten months later, BGI served its infringement expert report on the '984 Patent, which contained several new theories not previously disclosed, including a doctrine of equivalents theory. Illumina had to expend additional time and resources responding to BGI's numerous and baseless claims, including new theories that it had not had the chance to explore during discovery.

As this Court recognized in its Order granting Illumina's summary judgment motion, all of BGI's infringement theories depended on a scientifically inaccurate assertion that double-stranded DNA constitutes "a single DNA molecule comprising multiple copies of only one" DNA sequence. Dkt. No. 424 at 16. Even BGI's expert readily admitted in deposition that double-stranded DNA is not comprised of two copies of *one* sequence, but is rather comprised of two complementary (not identical)

1 sequences. Dkt. No. 377-4 (Puglisi Tr.) at 9:20-10:7. Accordingly, this Court granted summary
 2 judgment, noting that even drawing “all reasonable inferences in BGI’s favor, there is no genuine
 3 dispute of fact that dsDNA comprises of two difference sequences.” Dkt. No. 424 at 18. BGI’s doctrine
 4 of equivalents theories were also rejected because they were untimely and failed “to compare the
 5 accused features to the claim limitations.” *Id.* at 19.

6 BGI’s presentation of multiple different infringement theories all based on a clearly unfounded
 7 assertion that two complementary DNA sequences are the same wasted significant resources during fact
 8 discovery, expert discovery, and summary judgment briefing, as did BGI’s assertion of baseless and
 9 untimely DOE theories. Illumina was playing whack-a-mole for over a year attempting to combat
 10 BGI’s ever-evolving infringement claims. *See Oplus Techs., Ltd. v. Vizio, Inc.*, 782 F.3d 1371, 1374
 11 (Fed. Cir. 2015) (vacating district court’s denial of fees where the plaintiff’s “litigation positions, expert
 12 positions, and infringement contentions were a constantly moving target, a frustrating game of Whac—
 13 A—Mole throughout the litigation.”).

14 There was no excuse for BGI to advance these unreasonable and scientifically inaccurate
 15 assertions. Beyond the fact that BGI’s expert did not stand by the double-stranded DNA theory that he
 16 relied on in his report, BGI’s attorneys include several individuals with undergraduate and graduate
 17 degrees in various science and engineering disciplines who should have been well aware of the
 18 absurdity of their position. For example, BGI’s lead trial attorney, Mr. Bilsker holds an undergraduate
 19 degree in Chemical and Bioengineering and a graduate degree in Biomedical Engineering. *See* Ex. 2
 20 at 3. He even (inappropriately) held himself out as a scientist during trial. Dkt. No. 543 (Trial Tr.) at
 21 1261:19-1262:4 (“I’m not supposed to talk about my experience, but I’m a scientist as well.”). A basic
 22 biochemistry textbook directly contradicted BGI’s positions. *See* Ex. 3 (Weinstock Rpt.) at 28-29
 23 (citing Lehninger principles of biochemistry (1st ed)). It was frivolous of BGI to assert a theory based
 24 on such an inaccurate proposition.

25 BGI’s continued assertion of the ’984 Patent after this Court’s claim construction Order was
 26 especially unreasonable and supports an award of attorney fees.⁴ *See Amazon Web Servs., Inc. v.*

27
 28 ⁴ At the very least BGI’s behavior supports an award of attorney fees for the effort Illumina had to
 expend to litigate the ’984 Patent after claim construction.

1 *PersonalWeb Techs., LLC*, No. 18-md-02834-BLF, 2020 WL 5910080, at *13 (N.D. Cal. Oct. 6, 2020)
 2 (awarding fees where Plaintiff's lawsuit "became baseless after the Court's Markman order" and the
 3 "reasonable course of action would have been to stipulate to non-infringement").

4 **3. BGI's Frivolous Inequitable Conduct Theories Were Unreasonable**

5 The Federal Circuit has long explained that the meritless assertion of inequitable conduct is an
 6 intolerable "plague," given that it is essentially an assertion of fraud by professionals without basis.
 7 *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1289 (Fed. Cir. 2011) ("Left unfettered,
 8 the inequitable conduct doctrine has plagued not only the courts but also the entire patent system.").
 9 Here, BGI irresponsibly pursued multiple meritless inequitable conduct theories that served only to
 10 drive up the cost and complexity of Illumina's meritorious enforcement of its patents. *See Nikko*
 11 *Materials*, 2006 WL 118438, at *8 (finding the case exceptional where the Plaintiff "was forced to
 12 defend against RES' affirmative defenses of inequitable conduct and unclean hands, two defenses that
 13 the Court ultimately found to be wholly unsupported by any facts").

14 BGI's first meritless inequitable conduct theory was rejected at the pleadings stage. BGI
 15 accused Illumina, through at least ten of its attorneys and one of its experts, of making various false
 16 representations to the PTAB and Federal Circuit that allegedly mischaracterized prior art references to
 17 mislead both tribunals into believing that Illumina's patents were not invalid. Dkt. No. 81 at 3-4.
 18 However, BGI's only support for this bizarre conspiracy was Illumina's arguments in contested
 19 proceedings, before scientifically trained judges. In fact, CGI's argument was mainly focused on
 20 statements made by Illumina's expert and "just lumps in the attorneys where their names appeared on
 21 the papers." *Id.* at 7. This Court found that BGI's theories could not even meet the pleadings standard
 22 because even construing "CGI's allegations in the most favorable light to it, the purported
 23 misrepresentations *at most* constitute attorney argument regarding how prior art should be interpreted,
 24 not demonstrably false statements." *Id.* at 5 (emphasis added). BGI's attempt to assert this theory
 25 without any justifiable belief of its truth was unreasonable.

26 After its first theory was rejected, BGI proposed that the inventors concealed the Kovacs
 27 reference from the Patent Office. However, after taking over 50 hours of deposition testimony and
 28 rummaging through hundreds of pages of inventor lab notebooks, BGI had no credible basis to allege

1 that the inventors had ever even seen Kovacs. Undeterred, BGI continued to litigate this defense
2 through the summary judgment stage and beyond. BGI was forced to shift its focus to an implausible
3 theory of inequitable conduct based on the fact that another Solexa employee, Dr. Lee, who is not an
4 inventor and had no duty of disclosure to the PTO, cited to Kovacs in her lab notebook. Dkt. No. 377
5 at 17. Based on pure conjecture, BGI asserted that the other inventors must have also known about
6 Kovacs even though they all testified to the contrary. *See* Dkt. No. 377-8 (Wu Decl.) ¶ 5; Dkt. No. 377-
7 9 (Liu Decl.) ¶ 5; Dkt. 239-6 (BGI II) (Wu Tr.) at 287:14-20. Even BGI's expert admitted that there
8 was no evidence that the inventors knew of Kovacs. Dkt. No. 377-11 (Metzker Tr.) at 245:19-246:4.

9 BGI did not stop there. It further alleged that a host of Illumina attorneys and eight of the
10 inventors of the Asserted Patents participated in a years-long conspiracy to conceal Kovacs from the
11 PTO as a part of a scheme to hide their supposed copying of Zavgorodny. Dkt. No. 386-4 at 24. Again,
12 BGI offered nothing but speculation in support of this invented scheme. *Id.* 386-4 at 25. In fact,
13 Zavgorodny was submitted to the PTO, which contradicts a theory based on concealment of copying
14 from Zavgorodny. As this Court recognized in its Summary Judgment Order, there can be no intent to
15 deceive based on a reference that was properly disclosed to the Patent Office. Dkt. No. 424 at 24. None
16 of BGI's inequitable conduct theories ever moved beyond baseless speculation and should have been
17 abandoned at least by the close of discovery. *See e.g.*, Dkt. No. 420 at 57:5-11 ("[W]hat you have
18 strung together is supposition, but it doesn't add up to reasonable inference.").

19 All flavors of BGI's second inequitable conduct theory were also unreasonable because BGI
20 had no basis to assert that the inventors would have considered Kovacs material or that there was intent
21 to deceive. Dkt. No. 424 at 22-25. Kovacs was not directed to sequencing or azidomethyl as a blocking
22 group, and it was cumulative of other prior art. Dkt. No. 377 at 19-20. Tellingly, BGI's attorneys did
23 not even rely on Kovacs as one of the nine references it used in its two IPR Petitions filed with the
24 PTAB before this lawsuit. *See e.g., id.* Finally, BGI had no evidence of any intent to deceive the PTO
25 by not submitting Kovacs. Dkt. No. 424 at 23. The inventors submitted other, similar references that
26 disclosed overlapping subject matter so there would have been no benefit to omitting Kovacs. *Id.* at
27 20, 22. BGI's shifting conspiracy theories backed by nothing but speculation are indicative of BGI's
28 unreasonableness.

1 BGI's conduct in attempting to extract useful information out of Illumina's inventors was also
2 inappropriate and unprofessional. It was nothing more than a smear campaign. For example, when Mr.
3 Bilsker asked Dr. Xiaohi Liu when he last saw Zavgorodny, and Dr. Liu—whose first language is not
4 English—asked for clarification, Mr. Bilsker responded “[w]ell, we as humans have these things called
5 “eyes” and your eyes can look upon an object and then a signal is sent to your brain that says, ‘Ah, I
6 see an object.’ So that’s what I mean by ‘see.’” Ex. 4 (X. Liu Tr.) at 183:25-184:18. Later in the same
7 deposition, when Dr. Liu stated that he was still reading a passage that Mr. Bilsker wanted to question
8 him about, Mr. Bilsker repeatedly asked Dr. Liu “[a]re you able to understand the English language.”
9 *See id.* at 299:8-300:25. In Dr. Reudiger's deposition, when she disagreed with Mr. Bilsker's
10 characterization of the Zavgorodny reference, Mr. Bilsker asked “Did you always have this much
11 trouble understanding the chemical literature, or is it just for today?” Ex. 5 (Ruediger Tr.) at 168:16-
12 169:6. This inappropriate and harassing conduct is further evidence that BGI was unreasonable in
13 litigating this case.

14 After this Court granted Illumina's motion for summary judgment of no inequitable conduct,
15 Dkt. No. 424 at 24-25, BGI pivoted to pursuing a legally defunct claim that the inventors copied from
16 Zavgorodny in attempted support of their obviousness case. However, as this Court acknowledged in
17 its rulings on the parties' motions *in limine*, not only did BGI fail to disclose any of these theories in its
18 expert reports, but “the opinions regarding the inventors' alleged reliance on Zavgorodny and Kovacs
19 are legally improper and irrelevant because they involve use of improper hindsight to retrace the alleged
20 path of the inventors.” Dkt. No. 481 at 4. Thus, BGI was precluded from introducing expert testimony
21 or other evidence regarding the path of the inventors.

22 Again, BGI was undeterred. In blatant violation of this Court's motion *in limine* ruling, BGI
23 continued to designate large swaths of testimony from the inventor depositions designed to insinuate
24 that the inventors knew about and relied upon the Zavgorodny and Kovacs references in their path to
25 the claimed inventions. *See* Dkt. No. 499. BGI designated this testimony *after* the parties agreed to
26 revise deposition designations in response to the Court's motion *in limine* rulings. Dkt. No. 495-1.
27 Illumina was forced to submit a brief on its objections to these clearly improper designations on the eve
28 of trial because BGI refused to withdraw them. Dkt. No. 499. Although BGI filed a response to

1 Illumina's brief defending its inappropriate designations, BGI substantially narrowed the designated
 2 testimony two days later, rendering most of the disputed issues that the parties spent significant time
 3 briefing moot. *See* Dkt. No. 538 (Trial Tr.) at 154:19-23. BGI's disregard for this Court's motion *in*
 4 *limine* ruling resulted in significant makework for the parties and this Court over an issue that BGI
 5 should have abandoned long before the start of trial.

6 In sum, BGI attempted to advance a baseless defense of inequitable conduct to smear the
 7 inventors. When the Court granted Illumina's motion for summary judgment of no inequitable conduct,
 8 BGI refused to abandon ship. Instead, it pivoted to a theory that the claimed invention must be obvious
 9 because the inventors copied from Zavgorodny to arrive at it. Again, this theory was borne of
 10 imagination rather than evidence. This Court summarized the problem well at trial: "the case that [BGI]
 11 wanted to make was a case that I threw out at summary judgment." Dkt. No. 539 (Trial Tr.) at 527:7-
 12 11. Rather than finally accept defeat when this Court granted Illumina's motion *in limine*, BGI
 13 continued to advance inventor testimony that, as this Court acknowledged, "went right to the core of
 14 [the] rulings on Motion in Limine Number 2 on the path of the invention, and there were scores of
 15 them." *Id.* at 527:4-7. This inappropriate conduct resulted in significant wasted time, and accordingly
 16 supports an award of attorney fees.

17 4. BGI's Conduct During Discovery Unreasonably Expended Resources On 18 Unnecessary Disputes

19 BGI's conduct during discovery in this case was unreasonable and resulted in wasted resources.
 20 Illumina was forced to file nine discovery motions in this case, eight of which were largely decided in
 21 Illumina's favor. Magistrate Judge Hixson granted Illumina's motions to compel depositions of key
 22 witnesses, documents, and interrogatory responses related to BGI's design around efforts, and over 50
 23 documents improperly withheld on alleged privilege grounds. There were also multiple motions filed
 24 because BGI refused to comply with discovery ordered by this Court, and several motions that BGI
 25 forced Illumina to fully draft before ultimately agreeing to the requested discovery.

26 As one example of BGI's improper discovery conduct, Illumina was forced to file a protective
 27 order motion in response to BGI's untimely motion to compel additional inappropriate deposition
 28 testimony from Illumina's expert, Dr. Floyd Romesberg. Dkt. No. 477 (BGI II). BGI sought additional
 deposition time so that it could continue asking Dr. Romesberg harassing and irrelevant questions about

1 his personal life. *Id.* BGI's harassing conduct during Dr. Romesberg's deposition was an inappropriate
2 and a wasteful use of time. BGI's request for additional time to continue such harassment, 105 days
3 after the deposition and months after the close of expert discovery, shows the frivolous and
4 unreasonable nature of BGI's litigation conduct. The Court swiftly denied BGI's motion to compel,
5 noting BGI's inexcusable untimeliness.⁵ Dkt. No. 479 (BGI II).

6 BGI also refused to answer an interrogatory, produce documents, and allow witnesses to answer
7 questions related to BGI's efforts to design around the asserted patents. BGI wrongly asserted privilege
8 over this information, claiming that the relevant evidence "would necessarily involve revealing
9 attorneys' mental impressions." Dkt. No. 200 (BGI II) at 4. When Illumina was forced to compel this
10 discovery, Judge Hixson agreed with Illumina that BGI's privilege position was clearly unfounded and
11 that efforts "by a defendant to design around can be relevant to a patent infringement lawsuit in several
12 ways." Dkt. No. 221 (BGI II). Illumina then had to re-visit several depositions of key BGI employees
13 to obtain information about BGI's design around that was previously withheld.

14 BGI also improperly instructed Dr. Radoje Drmanac and Dr. Roy Tan not to answer questions
15 concerning any research activities conducted after April of 2020. Defendants originally justified this
16 position on dubious attorney work product grounds, which were rejected. Further, at the hearing on
17 Illumina's discovery motions, BGI completely abandoned its position on work product and had already
18 let other witnesses testify about post-April 2020 testing. Dkt. No. 301 (BGI II) at 2. BGI's flip-flopping
19 forced Illumina to waste time briefing this issue, wasted everyone's time preparing for the hearing, and
20 necessitated time-consuming follow-up depositions.

21 BGI also improperly resisted depositions of BGI Group's Chairman, Jian Wang, and two other
22 high-level executives, Xun Xu, and Duncan Yu. BGI cited the Apex doctrine as justification, even in
23 the face of irrefutable evidence that these witnesses were the decision makers about BGI's attempt to
24 launch commercially in the United States. This Court rejected BGI's arguments, finding that these
25 "witnesses have unique, non-repetitive knowledge because there is no substitute for deposing a
26 decisionmaker." *Id.* at 4.

27
28 ⁵This Court later granted Illumina's motion *in limine* seeking to prevent BGI from harassing Dr. Romesberg by raising his personal life at trial. Dkt. No. 481 at 15.

1 BGI's conduct was particularly egregious with respect to the deposition of Jian Wang, the
 2 chairman of the BGI group with ultimate responsibility for BGI's decision to introduce its infringing
 3 azido-based sequencers into the U.S. Dkt. No. 525-5 at 9 (34:1-34:15). Even after the Court's order
 4 compelling BGI to provide Jian Wang for a deposition, and BGI's stipulation that Dr. Wang's
 5 deposition would be taken no later than 40 days after Judge Hixson's resolution of a privilege dispute
 6 that resulted in the production of over 50 improperly withheld documents, BGI sought to delay, avoid,
 7 and complicate this deposition. BGI filed a motion to extend the time to hold the deposition of Mr.
 8 Wang, allegedly due to alleged COVID concerns spurred by four cases of COVID-19 in Macao. Dkt.
 9 No. 459 (BGI II). BGI did not identify any restrictions on travelling that would prevent a deposition,
 10 nor did BGI provide a reason why it did not provide dates for the deposition in the agreed-upon 40 day
 11 period. This Court denied BGI's request for an extension of time and required BGI to make Dr. Wang
 12 available. Dkt. No. 423.

13 Illumina was also forced to engage in a protracted dispute over BGI's improper and unfounded
 14 privilege assertions. BGI's privilege logs and privilege assertions were so deficient that the Court found
 15 it necessary to conduct *in camera* review of over 20 documents withheld by BGI. *See* Dkt. No. 382
 16 (BGI II). The dispute ultimately resulted BGI's production of over 50 improperly withheld documents.

17 Pursuant to a letter brief filed by Illumina on March 31, 2021, the Court ordered BGI to serve a
 18 privilege log for six documents in dispute, and to serve its remaining logs by April 21. Dkt. No. 313-4
 19 (BGI II). However, BGI's April 21 logs were woefully insufficient in meeting BGI's burden to prove
 20 that the documents were properly withheld. Dkt. No 364-4 (BGI II). Illumina was forced to file a
 21 second letter brief requesting *in camera* review of certain documents.⁶ *Id.* The Court agreed with
 22 Illumina, finding that BGI's entries "in no way show" that "the documents are subject to protection
 23 under attorney-client privilege" and ordered BGI to submit over 20 documents for *in camera* review.
 24 Dkt. No. 382 (BGI II).

25 _____
 26 ⁶ In response to Illumina's letter brief, BGI attempted to compel *in camera* review of 372 of Illumina's
 27 privileged documents. Dkt. No. 362-4 (BGI II). Illumina diligently provided a responsive portion to
 28 BGI's letter brief, which raised issue with Illumina's logs for the first time three days before the filing
 deadline, despite the unreasonable turn around time. The Court denied BGI's request for *in camera*
 review outright, finding that BGI's motion for could not "even possibly be considered timely." Dkt.
 No. 370 (BGI II) at 3.

Upon review, the Court overruled BGI's claims of privilege on over 50 improperly withheld documents. Dkt. No. 417 (BGI II) at 7. The Court found that, "[i]t seems like Defendants ran a search for the word 'patent,' and then claimed privilege over every reference to that word, regardless of context." *Id.* In addition, on the same night that Illumina filed its second letter brief regarding *in camera* review, BGI agreed to produce or unredact over **45** improperly withheld documents involved in the dispute at the eleventh hour. That BGI waited ***over a month*** from when Illumina first raised this issue is further demonstration of BGI's unreasonable and wasteful discovery conduct.

The privilege dispute was not the only occasion during which BGI unreasonably waited until the eleventh-hour to cooperate. On many occasions, BGI refused to cooperate with Illumina until ***after*** Illumina spent significant resources drafting its portion of a discovery letter brief. For example, on March 26, 2021, after BGI's adamant refusal to cooperate with Illumina on a number of discovery issues, Illumina sent its portion of four joint letter briefs to BGI. These letter briefs related to 1) resuming the deposition of Dr. Handong Li to correct for BGI's belated document production and improper privilege assertions, Ex. 6 (Zhang email), 2) compelling BGI to provide witnesses on 30(b)(6) topics, Ex. 7 (Hotze email), 3) compelling BGI to fully respond to RFPs and interrogatories regarding BGI's financials and R&D expenditures, Ex. 8 (Leicht email), and 4) compelling BGI to provide complete production of documents that evidenced BGI's use of infringing sequencers and reagents in the U.S., Ex. 9 (Root email). Only after receiving Illumina's portion of these four letter briefs did BGI agree to produce the requested discovery. *See* Dkt. No. 320 (BGI II). Although Illumina explained its position on these issues to BGI during earlier correspondence, BGI's unreasonable refusal to cooperate forced Illumina to expend resources writing letter briefs on meritless disputes.

D. Conclusion

BGI's egregious willful infringement and vexatious and wasteful litigation conduct warrants an award of attorney fees.⁷ If the Court finds that fees are appropriate, Illumina will submit a motion detailing its work in the relevant categories and the rates of the attorneys involved at a later date.

⁷ If this Court finds that Illumina's requested fees are not warranted, Illumina asks that it be awarded fees at least with respect to litigation of the '984 Patent, direct infringement, BGI's inequitable conduct defense and violation of this Court's Order on Illumina's motion *in limine* No. 2, and BGI's failed discovery motions.

V. ILLUMINA SHOULD BE AWARDED ENHANCED DAMAGES

BGI's willful infringement and the totality of the circumstances, as evidence by analysis of the *Read* factors, demonstrates that this case is egregious and enhanced damages are appropriate.

A. The Jury's Finding Of Willful Infringement Demonstrates That This Case Is Egregious

The Jury's determination that BGI willfully infringed Illumina's patents demonstrates that this case is egregious and supports an award of enhanced damages. As detailed above in Part IV.B, BGI knew of Illumina's patents, intentionally copied Illumina's technology, was warned that its products were infringing, and went ahead with a U.S. launch despite its knowledge of Illumina's Patents without any good faith belief of non-infringement or invalidity. As such, this case is egregious and this Court may increase the jury's damages award of eight million dollars up to three times. 35 U.S.C. § 284.

B. The *Read* Factors Support An Award Of Enhanced Damages

Analysis of the *Read* factors demonstrates that this Court should exercise its discretion and award enhanced damages. As described below, each of the nine *Read* factors weigh in favor of enhancing damages. The totality of the circumstances, taking into consideration BGI's copying, baseless non-infringement positions, and attempted U.S. launch of its products with full knowledge of Illumina's Patents, is precisely the type of "deliberate" and "consciously wrongful" conduct for which an award of enhanced damages is appropriate. *Halo*, 579 U.S. at 103-104.

1. *Read* Factor 1 Favors Enhancement

The first *Read* Factor considers whether "the infringer deliberately copied the ideas or design of another." *Read*, 970 F.2d at 827. This factor strongly favors awarding enhanced damages. As detailed above in Part IV.B.1, BGI deliberately copied Illumina's technology to create products that were designed to "mimic" Illumina's. BGI had Illumina's nucleotides analyzed by third-party vendors, discovered that Illumina's nucleotides were blocked using 3'OH azidomethyl, and then chose to use 3'OH azidomethyl in its own products, recognizing that Illumina's patented azidomethyl technology was "the best chemistry so far." See Dkt. No. 538 (Trial Tr.) at 286:5-12, 287:8-16, 288:3-7; Dkt. No. 539 (Trial Tr.) at 310:7-311:4; TX0393-002. In addition to copying Illumina's blocking group, BGI proceeded to copy Illumina's polymerase, linkers, and algorithms. See *supra* Part IV.B.1.

This deliberate copying supports an award of enhanced damages. *Apple Inc. v. Samsung Elecs.*

Co., Ltd., 258 F.Supp.3d 1013, 1030 (N.D. Cal. 2017) (finding that evidence of presentations “stating that the iPhone’s slide to unlock feature is better than the various Samsung alternatives” and recommending improvements of Samsung’s devices “by making them more like, or the same as, the iPhone’s slide-to-unlock feature” supports a finding that *Read* Factor 1 weighs in favor of enhanced damages); *Microsoft Corp. v. Corel Corp.*, No. 5:15-cv-05836-EJD, 2018 WL 2183268, at *6 (N.D. Cal. May 11, 2018) (awarding enhanced damages where “the evidence in the record suggests that Corel’s efforts to copy Microsoft’s Ribbon interface were deliberate, and that Corel [had] at least some awareness that it could be infringing Microsoft’s intellectual property in the process”).

2. *Read* Factor 2 Favors Enhancement

Read Factor 2—whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed—supports an award of enhanced damages. As described above in Part IV.B, BGI knew of Illumina’s patents and knowingly infringed them without a good faith belief of invalidity or non-infringement. Despite acknowledgement by upper management that BGI was prohibited from entering the U.S. due to Illumina’s battle-tested patents, BGI’s Chairman encouraged moving forward with a commercial launch of BGI’s infringing copycat products and directed the relevant executives not to be “too rule abiding.” *Supra*, Part IV.B.⁸

3. *Read* Factor 3 Favors Enhancement

Read Factor 3—the infringer’s behavior as a party to the litigation—also supports an award of enhanced damages. As described above, BGI engaged in inappropriate conduct throughout this case and wasted significant time and resources by: (1) needlessly contesting infringement; (2) baselessly continuing to assert the ’984 Patent even after an adverse claim construction; (3) aggressively pursuing an unsupported inequitable conduct defense, morphing that defense into a theory of copying that this Court rejected, and then continuing to pursue it at trial despite a motion *in limine* excluding related evidence and; (4) refusing to cooperate on basic discovery requests and forcing Illumina to file several discovery motions, gratuitously asserting privilege, and acting unprofessionally towards witnesses

⁸ Even if BGI could have had a good faith belief of invalidity with respect to the ’444 Patent, this does not excuse BGI’s knowing infringement of the other four asserted patents without any good-faith belief of invalidity.

during depositions. Further, several of BGI's witnesses were evasive and offered contradictory testimony which resulted in wasted time. *Compare* Dkt. No. 525-5 at 20, 24, 25 (68:13-68:25, 83:17-84:4, 85:11-23) (Chairman Wang denying that he knew about the launch of CoolMPS in the U.S. in 2020) *with* Dkt. No. 539 (Trial Tr.) at 404:7-19 (Yongwei Zhang testifying that Chairman Wang knew about the launch of CoolMPS in 2020).

Illumina was prejudiced by this behavior by being forced to expend resources on baseless claims, compelling BGI to produce documents that it was required to produce, moving for additional depositions, and having to litigate issues that were undisputed that BGI should have stipulated to. BGI's unreasonable behavior supports an award of enhanced damages. *See Genes Indus., Inc. v. Custom Blinds & Components, Inc.*, No. SACV 15-0476 AG (Ex), 2018 WL 11354574, at *6 (C.D. Cal. Jan. 29, 2018) (finding that *Read* Factor 3 weighs in favor of enhanced damages because it was "possible that Defendant's inequitable conduct and Walker Process counterclaims constituted the type of frivolous and unjustified litigation positions contemplated by this *Read* factor" and more importantly, Defendant's failure to "mount a meaningful non-infringement or invalidity defense show unreasonable litigation tactics").

4. *Read* Factor 4 Favors Enhancement

Read Factor 4, which considers the Defendant's size and financial condition, supports an award of enhanced damages. BGI is a large international company with at least 6,000 employees and carries out activities in over 100 countries. Ex. 10. In 2020, MGI Tech raised 1 billion dollars in Series B financing. Ex. 11. Enhancing the jury's \$8 million damages award will not significantly impact BGI. In 2020, BGI had \$8.36 billion in sales or revenue. Ex. 12. Moreover, in the third quarter of 2020, BGI had over \$1.71 billion in assets and over \$1.05 billion in cumulative operating income.⁹ Ex. 13 (certified translation of CGI003679732) at 734. The maximum enhanced damages of \$24 million is equivalent to a mere 0.29% of BGI's sales or revenue in 2020 alone, which confirms that BGI has the financial ability to pay treble damages. *Finisar Corp. v. Gigalight (USA) Corp.*, No. 18-cv-01077-RS, 2018 WL 8264089, at *6 (N.D. Cal. Nov. 15, 2018) (awarding enhanced damages where the Plaintiff demonstrated that Defendant's "substantial sales revenue show [that] the company has the financial

⁹ Values converted from Chinese Yuan to USD on January 10, 2022.

ability to pay treble damages”).

As further evidence that BGI has the ability to pay up to \$24 million in damages, in early 2013, BGI acquired CGI for \$117 million. Dkt. No. 542 (Trial Tr.) at 982:2-7. In April 2013, BGI and CGI entered into an agreement wherein BGI [REDACTED] [REDACTED]. Ex. 14 (TX0309) at 15. [REDACTED], the estimated total [REDACTED] [REDACTED]. Ex. 15 (TX1259) at 2. Even taking the dollar amounts from over seven years ago at face value, the amount of BGI’s investment in R&D confirms that BGI has the financial ability to pay enhanced damages.

5. ***Read Factor 5 Favors Enhancement***

Read Factor 5, which considers the closeness of the case, weighs in favor of enhancement. This was not a close case. As discussed above, direct infringement was largely undisputed and was decided on summary judgment. BGI offered no credible defense or rebuttal to Illumina’s demonstration of intentional copying, or BGI’s knowledge of Illumina’s patents. BGI’s invalidity theories for four out of the five asserted patents were substantially the same as positions that had already been rejected twice by the PTAB and the Federal Circuit. That BGI offered a slightly different theory for the ’444 Patent, which was ultimately accepted by the jury does not change the fact that the invalidity of the ’537, ’025, ’200, and ’973 Patents was not close. Accordingly, this was not a close case with respect to infringement, willfulness, or invalidity, and *Read Factor 5* weighs in favor of enhanced damages. *Fitness Anywhere LLC v. Woss Enterprises LLC*, No. 14-cv-01725-BLF, 2018 WL 6069511, at *5 (N.D. Cal. Nov. 20, 2018) (awarding enhanced damages in part due to “[t]he absence of a credible non-infringement theory”).

6. ***Read Factor 6 Favors Enhancement***

Read Factor 6—the duration of defendant’s misconduct—weighs in favor of awarding enhanced damages. BGI’s infringement began in early 2014 and continued for over six years until the preliminary injunction was entered on June 13, 2020. *See e.g.*, Dkt. No. 540 (Trial Tr.) at 688:25-689:8; Ex. 16 (PDX-04.11); Dkt. No. 185. BGI was aware of Illumina’s patents covering the azidomethyl blocking group during this time. The duration of BGI’s years-long research use of Illumina’s patents technology weighs in favor of enhancing damages. *Apple*, 258 F.Supp.3d at 1033-1035 (finding that a period of

1 **10-12 months** of infringement after having notice of the Asserted Patent favors enhanced damages); *I-*
 2 *Flow Corp. v. Apex Med. Techs., Inc.*, No. 07-cv-1200 DMS (NLS), 2010 WL 114005, at *3 (S.D. Cal.
 3 Jan. 6, 2010) (finding six years of misconduct was “substantial,” favoring enhancement). Even BGI’s
 4 infringing offers to sell sequencing products and perform sequencing services for KOLs, which began
 5 by at least 2019, supports enhanced damages. *Id.*; Ex. 17 (S. Liu Depo) at 91:17-93:12, 112:19-113:13,
 6 120:9-15, 123:25-124:6; Dkt. No. 539 (Trial Tr.) at 439:16-440:10; TX456; TX2324; Dkt. No. 84-4 at
 7 12.

8 **7. Read Factor 7 Favors Enhancement**

9 *Read* Factor 7, which considers the remedial action by the infringer, weighs in favor of enhanced
 10 damages. BGI did not attempt any remedial action after this lawsuit was filed. In fact, in February
 11 2020 BGI announced a commercial launch of its infringing products in the United States scheduled for
 12 April 2020—over nine months after the complaint was filed. TX1129. BGI did not halt its launch of
 13 its own volition. Instead, Illumina was forced to file a motion for a preliminary injunction to stop BGI’s
 14 infringing commercial activity. Thus, Factor 7 favors enhancement. *Georgetown Rail Equip. Co. v.*
 15 *Holland L.P.*, No. 6:13-CV-366, 2016 WL 3346084, at *20 (E.D. Tex. June 16, 2016), *aff’d* by Fed.
 16 Cir. *Georgetown*, 867 F.3d at 1245 (“[I]t is safe to say that the preliminary injunction was necessary to
 17 prevent Holland from offering for sale its Rail Vision Systems. Accordingly, this factor slightly favors
 18 enhancement.”).

19 **8. Read Factor 8 Favors Enhancement**

20 *Read* Factor 8, defendant’s motivation for harm, favors enhancement. BGI attempted to launch
 21 products in the U.S. based on technology copied from Illumina to directly compete with Illumina.
 22 Despite knowledge of Illumina’s patents, Chairman Wang instructed his team to “not be afraid of
 23 battles,” TX0698-002, and scolded them for being too rule abiding when they raised concerns about
 24 Illumina’s intellectual property. Chairman Wang emphasized to BGI’s U.S. team that “Americas
 25 (especially US) is the biggest market for Genomics” and that the Americas team should work “to bring
 26 value to returns on investments.” TX0699-002. In other words, Chairman Wang was motivated to risk
 27 moving forward despite well recognized “IP issues” by the opportunity for profits in the U.S. TX0698-
 28 001. Before its advertised entry into the U.S. market, BGI was offering sequencing products to KOLs

on a no-cost basis—in direct competition with Illumina—in an attempt to gain a foothold in the market before their full-scale commercial launch. *See* Dkt. No. 185 at 18; Dkt. No. 84-4 at 12, 17-18. “Where, as here, the infringer engages in infringing conduct to gain an edge over the patentee in a competitive market, this factor favors an award of enhanced damages.” *Apple*, 258 F.Supp.3d at 1035.

9. *Read* Factor 9 Favors Enhancement

Read Factor 9, which considers whether defendant attempted to conceal its misconduct, weighs in favor of enhancement. In 2015, Illumina sent an email to BGI asking if BGI’s “new platform is based on SBS” because if so, “and given that the external design seems to mimic Illumina’s HiSeq platforms, this is likely to create some serious challenges for our organisations.” Ex. 1. Internally, Yongwei Zhang suggested responding to Illumina’s inquiry by stating that the “Zebra platform (instrument, chemistry, flowcell, software, etc) are based on CG core technologies.” TX0696. This outright lie attempted to conceal the fact that BGI’s Zebra platform was based on Illumina’s chemistry, reagents, and software. Dkt. No. 539 (Trial Tr.) at 369:8-11 (Yongwei Zhang) (Q. “Zebra [was] developed from XY; correct? A. That’s correct.”). BGI also attempted to conceal its infringement by not publishing “any English-language marketing materials” to avoid “signaling that BGI is promoting the instrument” which “could trigger legal action.” TX0713. BGI’s extensive effort into preventing Illumina from catching wind of its infringement, including directly lying to Illumina when asked about the technology it was employing in its platform, shows that *Read* factor nine strongly favors an award of enhanced damages. *I-Flow Corp.*, 2010 WL 114005, at *3 (finding that evidence, including Defendants’ request for non-publication of its patent application and Defendants’ testimony that it “did not inform Plaintiff of their plans to develop the [infringing product] despite the opportunity to do so” support “Plaintiff’s position that Defendants attempted to conceal their misconduct”).

For these reasons, all of the *Read* factors favor an award of enhanced damages. In light the totality of the circumstances and BGI’s willful infringement, Illumina asks that the Court exercise its discretion to award Illumina enhanced damages.

VI. CONCLUSION

For the reasons stated herein, Illumina respectfully requests that this Court award Illumina attorney fees and enhanced damages.

1 Date: January 11, 2022

Respectfully submitted,

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